

**IRON AND STEEL, IRON ORE,
AND COAL STATISTICS
TO THE END OF 1901.**

**COMPLIMENTS OF THE
AMERICAN IRON AND STEEL ASSOCIATION.
PHILADELPHIA.**

IRON AND STEEL, IRON ORE, AND COAL STATISTICS

FOR

THE UNITED STATES, GREAT BRITAIN,
GERMANY, FRANCE, AND BELGIUM.

REVISED TO THE END OF 1901.

BY JAMES M. SWANK,
"GENERAL MANAGER OF THE AMERICAN IRON AND
STEEL ASSOCIATION.

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THIS compilation of Iron and Steel, Iron Ore, and Coal statistics for the United States and four European countries is presented to the members of the American Iron and Steel Association as a souvenir of the completion at the date given below of my thirty years of continuous service first as Secretary and afterwards as General Manager of the Association.

J. M. S.

PHILADELPHIA, December 31, 1902.

IRON AND STEEL, IRON ORE, AND COAL STATISTICS TO 1901.

WE present herewith to the members of the American Iron and Steel Association complete statistics of the production of iron and steel, iron ore, and coal in the United States, Great Britain, Germany, France, and Belgium to the close of 1901, and also the production of iron ore in Algeria, beginning in most cases as far back as authentic statistics are available. We also add for the United States statistics of the production of coke to the close of 1901 and of the shipments of Connellsville and Pocahontas Flat Top coke; also statistics of the shipments of Lake Superior iron ore and of Cuban iron ore to the same date; also complete statistics of the imports of iron ore into the United States to the close of 1901.

Production of Coal in the United States.

THE following table gives the production of all kinds of coal in the United States in gross tons in the census years 1870 and 1880, ending on the 31st day of May of each year; in the census year 1889, ending on the 31st day of December of that year; and in the calendar years from 1881 to 1888 and from 1890 to 1901. Authentic statistics for earlier years are not available. Credit is due to the Census Bureau for the statistics for census years and to the Division of Mining and Mineral Resources of the United States Geological Survey for the statistics for other years.

Years.	Pennsylvania anthracite.	Bituminous and all other.	Total. Gross tons.
1870.....	13,973,460	15,369,120	29,342,580
1880.....	25,572,160	38,250,670	63,822,830
1881.....	28,500,016	48,365,341	76,865,357
1882.....	31,358,264	60,861,190	92,219,454
1883.....	34,336,469	68,531,500	102,867,969
1884.....	33,175,756	73,730,539	106,906,295
1885.....	34,228,548	64,840,668	99,069,216
1886.....	34,853,077	66,646,947	101,500,024
1887.....	37,578,747	79,073,227	116,651,974
1888.....	41,624,611	91,107,002	132,731,613
1889.....	40,665,152	85,432,717	126,097,869
1890.....	41,489,858	99,377,073	140,866,931
1891.....	45,236,992	105,268,962	150,505,954
1892.....	46,850,450	113,264,792	160,115,242
1893.....	48,185,306	114,629,671	162,814,977
1894.....	46,358,144	106,089,647	152,447,791
1895.....	51,785,122	120,641,244	172,426,366
1896.....	48,523,287	122,893,103	171,416,390
1897.....	46,974,714	131,794,630	178,769,344
1898.....	47,663,075	148,742,878	196,405,953
1899.....	53,944,647	172,608,917	226,553,564
1900.....	51,221,353	189,566,885	240,788,238
1901.....	60,242,560	201,631,115	261,873,675

The maximum production of both anthracite and bituminous coal was attained in 1901.

Production of Coke in the United States.

THE following table, compiled from the reports of the United States Geological Survey, gives the total production of coke in the United States from 1880 to 1901, in net tons of 2,000 pounds.

Years.	Net tons.	Years.	Net tons.	Years.	Net tons.
1880....	3,338,300	1888..	8,540,030	1896..	11,788,773
1881....	4,113,760	1889..	10,258,022	1897..	13,288,984
1882....	4,793,321	1890..	11,508,021	1898..	16,047,209
1883....	5,464,721	1891..	10,352,688	1899..	19,668,569
1884....	4,873,805	1892..	12,010,829	1900..	20,533,348
1885....	5,106,696	1893..	9,477,580	1901..	21,795,883
1886....	6,845,369	1894..	9,203,632	.....	.....
1887....	7,611,705	1895..	13,333,714	.....	.....

The maximum production of coke in the United States was reached in 1901.

Shipments of Connellsville Coke.

THE following table, compiled from statistics furnished by Mr. H. P. Snyder, editor of the *Connellsville Courier*, gives the shipments of coke from the Connellsville region in Pennsylvania from 1880 to 1901, in net tons of 2,000 pounds. Statistics for earlier years are not available.

Years.	Net tons.	Years.	Net tons.	Years.	Net tons.
1880...	2,205,946	1888..	4,955,553	1896..	5,411,602
1881....	2,639,002	1889..	5,930,428	1897..	6,915,052
1882....	3,043,394	1890..	6,464,156	1898..	8,460,112
1883....	3,552,402	1891..	4,760,665	1899..	10,129,764
1884....	3,192,105	1892..	6,329,452	1900..	10,166,234
1885....	3,096,012	1893..	4,805,623	1901..	12,609,949
1886....	4,180,521	1894..	5,454,451	.....	.....
1887....	4,146,989	1895..	8,244,438	.....	.....

The maximum shipments of coke from the Connellsville region were reached in 1901.

Shipments of Pocahontas Flat Top Coke.

THE following table gives the shipments of Pocahontas Flat Top coke from 1883 to 1901.

Years.	Net tons.	Years.	Net tons.	Years.	Net tons.
1883....	23,762	1890..	499,148	1897..	855,756
1884....	56,360	1891..	466,016	1898..	1,276,172
1885....	48,571	1892..	499,777	1899..	1,317,246
1886....	59,021	1893..	539,548	1900..	1,341,444
1887....	151,171	1894..	865,684	1901..	1,279,972
1888....	202,808	1895..	707,697	.....	.....
1889....	310,504	1896..	999,567	.....	.....

The maximum shipments of Pocahontas Flat Top coke were reached in 1900.

Production of Iron Ore in the United States.

PREVIOUS to 1870 no iron ore statistics for the United States are complete. The figures for 1870 and 1880 are for census years ending on May 31 of those years. For 1889 (census year) and subsequent years they are for calendar years. Since 1889 the statistics given have been compiled by the United States Geological Survey.

Years.	Gross tons.	Years.	Gross tons.	Years.	Gross tons.
1870....	3,031,891	1892..	16,296,666	1897..	17,518,046
1880....	7,120,362	1893..	11,587,629	1898..	19,433,716
1889....	14,518,041	1894..	11,879,679	1899..	24,683,173
1890....	16,036,043	1895..	15,957,614	1900..	27,553,161
1891....	14,591,178	1896..	16,005,449	1901..	28,887,479

The maximum production of iron ore in the United States was reached in 1901.

Production of Cornwall Iron Ore.

THE following table gives the production of iron ore by the Cornwall mines in Pennsylvania from 1864 to 1901. The production from 1740 to February, 1864, amounted to 2,524,908 tons. The figures for 1864 are for 11 months only.

Years.	Gross tons.	Years.	Gross tons.	Years.	Gross tons.
1864...	165,915	1877..	171,589	1890..	686,302
1865....	114,803	1878..	179,299	1891..	663,755
1866....	216,660	1879..	268,488	1892..	634,714
1867....	202,755	1880..	231,173	1893..	439,705
1868....	165,843	1881..	249,050	1894..	371,710
1869....	173,429	1882..	309,681	1895..	614,598
1870....	174,408	1883..	363,143	1896..	463,059
1871....	176,055	1884..	412,320	1897..	419,878
1872....	193,317	1885..	508,864	1898..	584,342
1873....	166,782	1886..	688,054	1899..	763,152
1874....	112,429	1887..	667,210	1900..	558,713
1875....	98,925	1888..	722,917	1901..	747,012
1876...	137,902	1889..	769,020	.....	.....

The maximum production of iron ore by the Cornwall mines was reached in 1889.

Shipments of Lake Superior Iron Ore.

THREE States, Michigan, Wisconsin, and Minnesota, now comprise the Lake Superior iron-ore region, which was originally confined to Michigan alone. Minnesota now leads her sister States in production. The following table gives the shipments of iron ore from the Lake Superior region from 1854 to 1901. The word shipments is not synonymous with production in this table.

Years.	Gross tons.	Years.	Gross tons.	Years.	Gross tons.
1854...	3,000	1870..	830,940	1886..	3,568,022
1855....	1,449	1871..	779,607	1887..	4,730,577
1856....	36,343	1872..	900,901	1888..	5,063,693
1857....	25,646	1873..	1,162,458	1889..	7,292,754
1858....	15,876	1874..	919,557	1890..	9,012,379
1859....	68,832	1875..	891,257	1891..	7,062,233
1860....	114,401	1876..	992,764	1892..	9,069,556
1861...	49,909	1877..	1,015,087	1893..	6,060,492
1862....	124,169	1878..	1,111,110	1894..	7,748,932
1863....	203,055	1879..	1,375,691	1895..	10,438,268
1864....	243,127	1880..	1,908,745	1896..	9,916,035
1865...	236,208	1881..	2,306,505	1897..	12,469,638
1866....	278,796	1882..	2,965,412	1898..	14,024,673
1867....	473,567	1883..	2,353,288	1899..	18,251,804
1868...	491,449	1884..	2,518,692	1900..	19,059,393
1869....	617,444	1885..	2,466,372	1901..	20,589,237

The maximum shipments of iron ore from the Lake Superior region were reached in 1901, but shipments will be greatly increased in 1902.

Imports of Iron Ore into the United States.

THE following table gives the total imports of iron ore into the United States in the fiscal years from June 30, 1871, to June 30, 1879, and the imports in the calendar years from January 1, 1879, to December 31, 1901. In 1879 this country for the first time imported iron ore largely from Europe. Prior to that year such iron ore as was imported came chiefly from Canada, more than one-half of the total imports coming from that country in the calendar years 1873, 1874, and 1875.

Years.	Gross tons.	Years.	Gross tons.	Years.	Gross tons.
1872....	23,733	1882..	589,655	1893..	526,951
1873....	45,981	1883..	490,875	1894..	168,541
1874....	57,987	1884..	487,820	1895..	524,153
1875....	56,655	1885..	390,786	1896..	682,806
1876....	17,284	1886..	1,039,433	1897..	489,970
1877....	30,669	1887..	1,194,301	1898..	187,093
1878....	28,212	1888..	587,470	1899..	674,082
1879*..	150,197	1889..	853,573	1900..	897,831
1879†..	284,141	1890..	1,246,830	1901..	966,950
1880....	493,408	1891..	912,856	.....	.....
1881....	782,887	1892..	806,585	.....	.....

* Fiscal years end. † Calendar years begin.

The maximum imports of iron ore into the United States were reached in 1890.

Shipments of Iron Ore from Cuba.

THE first shipment of iron ore from the Province of Santiago, Cuba, to the United States was made by the Juragua Iron Company in August, 1884. In October, 1892, the Sigua Iron Company first commenced to ship iron ore to the United States, and in 1895 the Spanish-American Iron Company first commenced shipping iron ore to the United States. The Cuban Steel Ore Company for the first time commenced to ship iron ore in 1901. For the following complete details of the shipments of iron ore from Cuba we are indebted to Mr. Josiah Monroe, the secretary of the Juragua Iron Company. The figures given include a few lost cargoes, approximating 16,000 tons. They embrace all shipments since 1884.

Years— Gross tons.	Juragua Iron Company.		Sigua Iron Co.*	Spanish-Ameri- can Iron Co.		Total— Gross tons.
	Ship- ments to the Unit- ed States.	Ship- ments to other coun- tries.	Ship- ments to the United States.	Ship- ments to the Unit- ed States.	Ship- ments to other coun- tries.	
1884.....	25,295	.....	.....	.....	.....	25,295
1885.....	80,716	.....	.....	.....	.....	80,716
1886.....	112,074	.....	.....	.....	.....	112,074
1887.....	94,240	.....	.....	.....	.....	94,240
1888.....	206,061	.....	.....	.....	.....	206,061
1889.....	260,291	.....	.....	.....	.....	260,291
1890.....	363,842	.....	.....	.....	.....	363,842
1891.....	264,262	.....	.....	.....	.....	264,262
1892.....	335,236	.....	6,418	.....	.....	341,654
1893.....	337,155	.....	14,020	.....	.....	351,175
1894.....	156,826	.....	.....	.....	.....	156,826
1895.....	307,503	.....	.....	74,991	.....	382,494
1896.....	298,885	.....	.....	114,110	.....	412,995
1897.....	242,324	5,932	.....	154,492	51,537	454,285
1898.....	83,696	.....	.....	84,643	.....	168,339
1899.....	161,783	.....	.....	215,406	.....	377,189
1900.....	154,871	.....	.....	292,001	.....	446,872
1901.....	199,764	.....	.....	322,142	12,691	†552,248
Total....	3,684,824	5,932	20,438	1,257,785	64,228	5,050,858
Total shipments to the United States..... tons						4,980,698
Total shipments to other countries..... tons						70,160

* This company met with financial disaster and the mines that it operated in 1892 and 1893 are now idle.

† Including 17,651 tons shipped to the United States in 1901 by the Cuban Steel Ore Company, which has quit business.

Production of Pig Iron in the United States.

THE total production of pig iron in the United States in the past ninety-two years is shown in the following table. Prior to 1854 the statistics given were compiled by various Government and other statistical agencies. For 1854 and all succeeding years the statistics were gathered by the American Iron and Steel Association. The statistics for 1810, 1840, and 1850 are census figures. The figures for 1820 and 1830 are estimates made by early statisticians: census statistics are wanting.

Years.	Gross tons.	Years.	Gross tons.	Years.	Gross tons.
1810....	53,908	1860..	821,223	1881..	4,144,254
1820....	20,000	1861..	653,164	1882..	4,623,323
1828....	130,000	1862..	703,270	1883..	4,595,510
1829....	142,000	1863..	846,075	1884..	4,097,868
1830....	165,000	1864..	1,014,282	1885..	4,044,526
1831....	191,000	1865..	831,770	1886..	5,683,329
1832....	200,000	1866..	1,205,663	1887..	6,417,148
1840....	286,903	1867..	1,305,023	1888..	6,489,738
1842....	215,000	1868..	1,431,250	1889..	7,603,642
1846....	765,000	1869..	1,711,287	1890..	9,202,703
1847....	800,000	1870..	1,665,179	1891..	8,279,870
1848....	800,000	1871..	1,706,793	1892..	9,157,000
1849....	650,000	1872..	2,548,713	1893..	7,124,502
1850....	563,755	1873..	2,560,963	1894..	6,657,388
1852....	500,000	1874..	2,401,262	1895..	9,446,308
1854....	657,337	1875..	2,023,733	1896..	8,623,127
1855....	700,159	1876..	1,868,961	1897..	9,652,680
1856....	788,515	1877..	2,066,594	1898..	11,773,934
1857....	712,640	1878..	2,301,215	1899..	13,620,703
1858....	629,548	1879..	2,741,853	1900..	13,789,242
1859....	750,560	1880..	3,835,191	1901..	15,878,354

Production of Bessemer Steel in the United States.

THE following table gives the production of Bessemer steel in the United States, in gross tons.

Years.	Gross tons.	Years.	Gross tons.	Years.	Gross tons.
1867....	2,679	1879..	829,439	1891..	3,247,417
1868...	7,589	1880..	1,074,262	1892..	4,168,435
1869....	10,714	1881..	1,374,247	1893..	3,215,686
1870...	37,500	1882..	1,514,687	1894..	3,571,313
1871....	40,179	1883..	1,477,345	1895..	4,909,128
1872....	107,239	1884..	1,375,531	1896..	3,919,906
1873....	152,368	1885..	1,519,430	1897..	5,475,315
1874....	171,369	1886..	2,269,190	1898..	6,609,017
1875....	335,283	1887..	2,936,033	1899..	7,586,354
1876....	469,639	1888..	2,511,161	1900..	6,684,770
1877....	500,524	1889..	2,930,204	1901..	8,713,302
1878....	653,773	1890..	3,688,871	.....	.....

Production of Open-Hearth Steel in the United States.

Years.	Gross tons.	Years.	Gross tons.	Years.	Gross tons.
1869....	893	1880..	100,851	1891..	579,753
1870....	1,339	1881..	131,202	1892..	669,889
1871....	1,785	1882..	143,341	1893..	737,890
1872....	2,679	1883..	119,356	1894..	784,936
1873....	3,125	1884..	117,515	1895..	1,137,182
1874....	6,250	1885..	133,376	1896..	1,298,700
1875....	8,080	1886..	218,973	1897..	1,608,671
1876....	19,187	1887..	322,069	1898..	2,230,292
1877....	22,349	1888..	314,318	1899..	2,947,316
1878....	32,255	1889..	374,543	1900..	3,398,135
1879....	50,259	1890..	513,232	1901..	4,656,309

Total Steel Production in the United States.

THE production of steel in the United States in the census year 1810 is returned at 917 gross tons. We have no further steel statistics until the census year 1860, when 11,838 gross tons are reported to have been made. No additional statistics are of record until 1863, when the production fell to 8,075 tons. From 1867 until 1901 the production of all kinds of crude steel, including steel castings, is shown in the following table.

Years.	Gross tons.	Years.	Gross tons.	Years.	Gross tons.
1867....	19,643	1879..	935,273	1891..	3,904,240
1868....	26,786	1880..	1,247,335	1892..	4,927,581
1869....	31,250	1881..	1,588,314	1893..	4,019,995
1870....	68,750	1882..	1,736,692	1894..	4,412,032
1871....	73,214	1883..	1,673,535	1895..	6,114,834
1872....	142,954	1884..	1,550,879	1896..	5,281,689
1873...	198,796	1885..	1,711,920	1897..	7,156,957
1874...	215,727	1886..	2,562,503	1898..	8,932,857
1875....	389,799	1887..	3,339,071	1899..	10,639,857
1876....	533,191	1888..	2,899,440	1900..	10,188,329
1877....	569,618	1889..	3,385,732	1901..	13,473,595
1878....	731,977	1890..	4,277,071	.....	.....

Production and Prices of Bessemer Steel Rails in the United States.

THE following table gives the annual production in gross tons of Bessemer steel rails in the United States from 1869 to 1901, together with their average annual price at works in Pennsylvania and the rates of duty imposed on foreign steel rails. The prices given are all in currency.

Years.	Gross tons.	Price.	Duty.
1869.....	8,616	\$132.25	} 45 per cent. <i>ad valorem</i> to Jan. 1, 1871.
1870.....	30,357	106.75	
1871.....	34,152	102.50	
1872.....	83,991	112.00	
1873.....	115,192	120.50	
1874.....	129,414	94.25	} \$28 per ton from January 1, 1871, to August 1, 1872; \$25.20 from August 1, 1872, to March 3, 1875; \$28 from March 3, 1875, to July 1, 1883.
1875.....	259,699	68.75	
1876.....	368,269	59.25	
1877.....	385,865	45.50	
1878.....	491,427	42.25	
1879.....	610,682	48.25	
1880.....	852,196	67.50	
1881.....	1,187,770	61.13	
1882.....	1,284,067	48.50	
1883.....	1,148,709	37.75	
1884.....	996,983	30.75	} \$17 per ton from July 1, 1883, to October 6, 1890.
1885.....	959,471	28.50	
1886.....	1,574,703	34.50	
1887.....	2,101,904	37.08	
1888.....	1,386,277	29.83	
1889.....	1,510,057	29.25	} \$13.44 per ton from October 6, 1890, to August 28, 1894.
1890.....	1,867,837	31.75	
1891.....	1,293,053	29.92	
1892.....	1,537,588	30.00	
1893.....	1,129,400	28.12	
1894.....	1,016,013	24.00	} \$7.84 per ton from August 28, 1894.
1895.....	1,299,628	24.33	
1896.....	1,116,958	28.00	
1897.....	1,644,520	18.75	
1898.....	1,976,702	17.62	
1899.....	2,270,585	28.12	
1900.....	2,383,654	32.29	
1901.....	2,870,816	27.33	

Production of Pig Iron in Great Britain.

THE following table gives the official Government statistics of the production of pig iron in the United Kingdom from 1740 to 1901. As there has been no iron industry in Ireland since about 1740 the figures given relate solely to the production of pig iron by England, Scotland, and Wales.

Years.	Gross tons.	Years.	Gross tons.	Years.	Gross tons.
1740....	17,350	1856..	3,586,377	1879..	5,995,337
1788...	68,300	1857..	3,659,447	1880..	7,749,233
1796...	125,079	1858..	3,456,064	1881..	8,144,449
1806....	243,851	1859..	3,712,904	1882..	8,586,680
1818....	325,000	1860..	3,826,752	1883..	8,529,300
1820...	400,000	1861..	3,712,390	1884..	7,811,727
1823....	455,166	1862..	3,943,469	1885..	7,415,469
1825....	581,367	1863..	4,510,040	1886..	7,009,754
1827...	690,000	1864..	4,767,951	1887..	7,559,518
1828....	703,184	1865..	4,825,254	1888..	7,998,969
1830....	677,417	1866..	4,523,897	1889..	8,322,824
1833....	700,000	1867..	4,761,023	1890..	7,904,214
1836....	1,000,000	1868..	4,970,206	1891..	7,406,064
1839....	1,248,781	1869..	5,445,757	1892..	6,709,255
1840....	1,396,400	1870..	5,963,515	1893..	6,976,990
1842....	1,099,138	1871..	6,627,179	1894..	7,427,342
1843....	1,215,350	1872..	6,741,929	1895..	7,703,459
1844...	1,999,608	1873..	6,566,451	1896..	8,659,681
1845....	1,512,500	1874..	5,991,408	1897..	8,796,465
1847....	1,999,508	1875..	6,365,462	1898..	8,609,719
1852....	2,701,000	1876..	6,555,997	1899..	9,421,435
1854....	3,069,838	1877..	6,608,664	1900..	8,959,691
1855...	3,218,154	1878..	6,381,051	1901..	7,928,647

Great Britain's maximum production of pig iron was reached in 1899.

Production of Coal in Great Britain.

GREAT BRITAIN has not been dependent upon any other country for any part of her supply of mineral fuel; she is, indeed, an exporter of coal in large quantities. The following table, compiled from the reports of His Majesty's inspectors of mines, gives the official statistics of the production of coal in Great Britain from 1854 to 1901.

Years.	Gross tons.	Years.	Gross tons.	Years.	Gross tons.
1854 ..	64,661,401	1870..	110,431,192	1886..	157,518,482
1855 ..	64,453,070	1871..	117,352,028	1887..	162,119,812
1856 ..	66,645,450	1872..	123,497,316	1888..	169,935,219
1857 ..	65,394,707	1873..	128,680,131	1889..	176,916,724
1858 ..	65,008,649	1874..	126,590,108	1890..	181,614,288
1859 ..	71,979,765	1875..	133,306,485	1891..	185,479,126
1860 ..	80,042,698	1876..	134,125,166	1892..	181,786,871
1861 ..	83,635,214	1877..	134,179,968	1893..	164,325,795
1862 ..	81,638,338	1878..	132,612,063	1894..	188,277,525
1863 ..	86,292,215	1879..	133,720,393	1895..	189,661,362
1864 ..	92,787,873	1880..	146,969,409	1896..	195,361,260
1865 ..	98,150,587	1881..	154,184,300	1897..	202,129,931
1866 ..	101,630,544	1882..	156,499,977	1898..	202,054,516
1867 ..	104,500,480	1883..	163,737,327	1899..	220,094,781
1868 ..	103,141,157	1884..	160,757,779	1900..	225,181,300
1869 ..	107,427,557	1885..	159,351,418	1901..	219,046,945

The maximum production of coal in Great Britain was reached in 1900.

Production of Iron Ore in Great Britain.

THE following table of the production of iron ore in the United Kingdom from 1855 to 1901 has been compiled from Mr. Richard Meade's "Coal

and Iron Industries of the United Kingdom” (London, 1882) and from the “Mineral Statistics” of His Majesty’s inspectors of mines.

Years.	Gross tons.	Years.	Gross tons.	Years.	Gross tons.
1855...	9,553,741	1871..	16,334,888	1887..	13,098,041
1856....	10,483,309	1872..	15,584,357	1888..	14,590,713
1857....	9,573,281	1873..	15,577,499	1889..	14,546,105
1858....	8,040,959	1874..	14,844,936	1890..	13,780,767
1859....	7,880,316	1875..	15,821,060	1891..	12,777,689
1860....	8,024,205	1876..	16,841,584	1892..	11,312,675
1861....	7,215,518	1877..	16,692,802	1893..	11,203,476
1862....	7,562,240	1878..	15,726,370	1894..	12,367,308
1863....	9,088,960	1879..	14,379,735	1895..	12,615,414
1864....	10,064,890	1880..	18,026,050	1896..	13,700,764
1865....	9,910,045	1881..	17,446,065	1897..	13,787,878
1866....	9,965,012	1882..	18,031,957	1898..	14,176,938
1867....	10,021,058	1883..	17,383,046	1899..	14,461,330
1868....	10,169,231	1884..	16,137,887	1900..	14,028,208
1869....	11,508,525	1885..	15,417,982	1901..	12,275,198
1870....	14,370,655	1886..	14,110,013	.....	.....

The maximum production of iron ore in Great Britain was reached in 1882. Great Britain is a large importer of iron ore, chiefly from Spain.

Production of Bessemer Steel Ingots in Great Britain.

THE statistics of the production of Bessemer and open-hearth steel ingots in Great Britain have been collected by Mr. J. S. Jeans, secretary of the British Iron Trade Association. The production of Bessemer steel ingots from 1868 to 1901 has been as follows, in gross tons. There are no trustworthy statistics for earlier years.

Years.	Gross tons.	Years.	Gross tons.	Years.	Gross tons.
1868...	110,000	1880..	1,044,382	1892..	1,500,810
1869....	160,000	1881..	1,441,719	1893..	1,493,454
1870....	215,000	1882..	1,673,649	1894..	1,535,384
1871....	329,000	1883..	1,553,380	1895..	1,535,225
1872....	410,000	1884..	1,299,676	1896..	1,815,842
1873....	496,000	1885..	1,304,127	1897..	1,884,155
1874....	540,000	1886..	1,570,520	1898..	1,759,386
1875....	620,000	1887..	2,089,403	1899..	1,825,074
1876....	700,000	1888..	2,032,794	1900..	1,745,004
1877....	750,000	1889..	2,140,791	1901..	1,606,253
1878...	807,527	1890..	2,014,843	.....	.....
1879....	834,511	1891..	1,642,005	.....	.....

Production of Open-Hearth Steel Ingots in Great Britain.

THE production of open-hearth steel ingots in Great Britain from 1873 to 1901 has been as follows. Authentic statistics for earlier years are wanting. In 1894 the production of open-hearth steel first exceeded that of Bessemer steel.

Years.	Gross tons.	Years.	Gross tons.	Years.	Gross tons.
1873....	77,500	1883..	455,500	1893..	1,456,309
1874....	90,500	1884..	475,250	1894..	1,575,318
1875....	88,000	1885..	583,918	1895..	1,754,737
1876....	128,000	1886..	694,150	1896..	2,317,555
1877....	137,000	1887..	981,104	1897..	2,601,806
1878....	175,500	1888..	1,292,742	1898..	2,806,600
1879....	175,000	1889..	1,429,169	1899..	3,030,251
1880....	251,000	1890..	1,564,200	1900..	3,156,050
1881....	338,000	1891..	1,514,538	1901..	3,297,791
1882...	436,000	1892..	1,418,830	.....	.....

Total Production of Steel in Great Britain.

THE following table, compiled from statistics published by the British Iron Trade Association, gives the production of all kinds of crude steel in Great Britain from 1873 to 1901. We have added to the production of Bessemer and open-hearth ingots an estimated production of crucible ingots and other steel. Steel castings are not included.

Years.	Gross tons.	Years.	Gross tons.	Years.	Gross tons.
1873...	653,500	1883..	2,088,880	1893..	3,049,763
1874...	710,500	1884..	1,854,926	1894..	3,210,702
1875...	788,000	1885..	1,968,045	1895..	3,389,962
1876...	908,000	1886..	2,344,670	1896..	4,233,397
1877....	967,000	1887..	3,150,507	1897..	4,585,961
1878....	1,063,027	1888..	3,405,536	1898..	4,665,986
1879....	1,089,511	1889..	3,669,960	1899..	4,955,325
1880....	1,375,382	1890..	3,679,043	1900..	5,001,054
1881....	1,859,719	1891..	3,256,543	1901..	5,000,000
1882...	2,189,649	1892..	3,019,640	.....	.....

Great Britain's maximum production of all kinds of steel was attained in 1900.

Production of Iron Ore in Germany.

IN his admirable and unequalled volume on "Coal and Iron in All Countries," prepared for the Paris Universal Exposition of 1878, Johann Pechar gives the production of iron ore in Germany and the Grand Duchy of Luxemburg at various periods prior to 1869 as follows: 1848, 693,725 metric tons; 1853, 903,236 tons; 1857, 1,962,054 tons; 1862, 2,216,023 tons; 1866, 2,996,148 tons; 1867, 3,264,464 tons; 1868, 3,634,302 tons.

The production of iron ore in Germany and Luxemburg from 1869 to 1901 is given by Dr. H. Rentzsch as follows, in metric tons. Germany imports iron ore from neighboring countries.

Years.	Metric tons.	Years.	Metric tons.	Years.	Metric tons.
1869...	4,083,807	1880..	7,238,640	1891..	10,657,521
1870....	3,839,222	1881..	7,573,772	1892..	11,539,133
1871....	4,368,025	1882..	8,263,254	1893..	11,457,533
1872....	5,895,674	1883..	8,756,617	1894..	12,392,065
1873....	6,177,576	1884..	9,005,796	1895..	12,349,600
1874....	5,137,468	1885..	9,157,869	1896..	14,162,335
1875....	4,730,352	1886..	8,485,758	1897..	15,465,979
1876....	4,711,982	1887..	9,351,106	1898..	15,901,263
1877....	4,980,048	1888..	10,664,307	1899..	17,989,635
1878....	5,462,055	1889..	11,002,187	1900..	18,964,294
1879....	5,859,439	1890..	11,406,132	1901..	16,570,258

The maximum production of iron ore in Germany and Luxemburg was reached in 1900.

Production of Pig Iron in Germany.

THE production of pig iron in Germany and Luxemburg in 1844 is said by Dr. Wedding to have amounted to only 171,000 metric tons, and Herr Pechar says that in 1848 it amounted to 205,342 tons. It was not until 1866 that the production reached 1,000,000 tons, in which year it is said by Dr. Wedding to have amounted to 1,046,954 tons. Since 1869 it has been as follows, in metric tons, according to Dr. Rentzsch, of Dresden-Blasewitz, the statistician of the *Ver-ein Deutscher Eisen und Stahl Industrieller*, who has verified the figures in the table.

Years.	Metric tons.	Years.	Metric tons.	Years.	Metric tons.
1869....	1,409,429	1880..	2,729,038	1891..	4,641,217
1870....	1,391,124	1881..	2,914,009	1892..	4,937,461
1871....	1,563,682	1882..	3,380,806	1893..	4,986,003
1872....	1,988,395	1883..	3,469,719	1894..	5,380,039
1873....	2,240,575	1884..	3,600,612	1895..	5,464,501
1874....	1,906,263	1885..	3,687,434	1896..	6,372,575
1875....	2,029,389	1886..	3,528,657	1897..	6,881,466
1876....	1,846,345	1887..	4,023,953	1898..	7,312,766
1877....	1,781,989	1888..	4,337,121	1899..	8,143,132
1878....	2,147,641	1889..	4,524,558	1900..	8,520,541
1879....	2,226,587	1890..	4,658,450	1901..	7,860,893

Germany's maximum production of pig iron was reached in 1900.

Adding the production of pig iron by Great Britain in 1901 to that of Germany and Luxemburg, and reducing metric tons in the above table to gross tons, gives us a total production of pig iron by both countries in 1901 of 15,665,310 gross tons, or 213,044 tons less than the production of 15,878,354 tons of pig iron by the United States in that year.

Production of Coal and Lignite in Germany.

THE following table, for the details of which we are indebted for the earlier years to Dr. Hermann Wedding and for later years to Dr. H. Rentzsch, gives the aggregate production of coal and lignite in Germany and Luxemburg from 1848 to 1901, in metric tons. About one-fourth of the annual production of coal in Germany and Luxemburg is brown coal, or lignite.

Years.	Metric tons.	Years.	Metric tons.	Years.	Metric tons.
1848....	5,800,985	1872..	42,324,467	1887..	76,232,618
1853....	10,714,556	1873..	46,145,194	1888..	81,960,083
1857....	14,867,121	1874..	46,658,145	1889..	84,973,230
1860....	16,730,492	1875..	47,804,054	1890..	89,290,834
1861....	18,755,361	1876..	49,550,461	1891..	94,252,278
1862....	20,660,677	1877..	48,229,882	1892..	92,544,030
1863....	22,366,203	1878..	50,519,899	1893..	95,426,153
1864....	25,612,899	1879..	53,470,716	1894..	98,805,702
1865....	28,552,762	1880..	59,118,035	1895..	103,957,639
1866....	28,162,805	1881..	61,540,485	1896..	112,471,106
1867....	30,802,889	1882..	65,378,211	1897..	120,474,485
1868....	32,879,123	1883..	70,442,648	1898..	127,958,550
1869....	34,343,913	1884..	72,113,820	1899..	135,844,419
1870....	34,003,004	1885..	73,675,515	1900..	149,788,256
1871....	37,856,110	1886..	73,682,584	1901..	152,628,931

Of the total production of coal and lignite in Germany and Luxemburg in 1900 there were 40,498,019 tons of brown coal, or lignite, and of the total production in 1901 there were 44,211,902 tons of brown coal.

The maximum production of coal and lignite in Germany and Luxemburg was reached in 1901.

Production of Finished Steel in Germany.

THE following table gives the production of all kinds of finished steel in Germany and Luxemburg from 1866 to 1901, in metric tons. We are indebted to Dr. Rentzsch for a verification of this table. Statistics of Bessemer and open-hearth steel ingots for early years are not available. Steel castings are included in the table.

Years.	Metric tons.	Years.	Metric tons.	Years.	Metric tons.
1866....	83,737	1878..	483,503	1890..	1,613,783
1867....	88,589	1879..	478,344	1891..	1,841,063
1868....	92,696	1880..	624,418	1892..	1,976,735
1869...	109,753	1881..	840,224	1893..	2,231,873
1870....	125,814	1882..	1,003,406	1894..	2,608,713
1871....	143,305	1883..	859,814	1895..	2,831,318
1872....	285,582	1884..	862,529	1896..	3,462,736
1873...	310,425	1885..	893,742	1897..	3,863,469
1874....	361,947	1886..	954,586	1898..	4,352,831
1875....	347,337	1887..	1,163,884	1899..	4,820,275
1876....	377,910	1888..	1,298,574	1900..	4,825,587
1877....	402,643	1889..	1,425,439	1901..	4,552,952

Germany's maximum production of all kinds of finished steel was attained in 1900.

The production of Bessemer and open-hearth steel ingots and castings in Germany and Luxemburg in 1901 was 6,394,222 metric tons. Assuming that the production of crucible steel in Great Britain in 1901 amounted to 95,956 gross tons, that country's total production of crude steel in that year would be exactly 5,000,000 tons. Adding Great Britain's production to that of Germany and Luxemburg gives us for both countries a total production in 1901 of 11,293,170 gross tons, or 2,-180,425 tons less than the production of 13,473,-595 tons by the United States in 1901.

Production of Iron Ore in France.

THE statistical tables for this country which we shall present have been compiled in part from statistics furnished by H. Pinget, of Paris,

secretary of the Comité des Forges de France, and in part from official government statistics. The production of iron ore in France from 1860 to 1900 (not including Algeria) has been as follows, in metric tons. Algeria appears hereafter.

Years.	Metric tons.	Years.	Metric tons.	Years.	Metric tons.
1860....	3,604,638	1877..	2,426,278	1890..	3,471,718
1865....	3,658,464	1878..	2,469,953	1891..	3,579,286
1866....	3,790,168	1879..	2,271,173	1892..	3,706,748
1867....	3,279,395	1880..	2,874,263	1893..	3,517,438
1868....	3,005,094	1881..	3,032,070	1894..	3,772,101
1869....	3,461,672	1882..	3,467,251	1895..	3,679,767
1870....	2,899,593	1883..	3,297,853	1896..	4,062,390
1871....	2,099,706	1884..	2,976,948	1897..	4,582,236
1872....	3,081,026	1885..	2,318,104	1898..	4,731,394
1873....	3,051,124	1886..	2,285,648	1899..	4,985,702
1874....	2,516,548	1887..	2,579,465	1900..	5,447,694
1875....	2,505,870	1888..	2,841,757	.....	.....
1876....	2,393,340	1889..	3,070,389	.....	.....

The maximum production of iron ore in France was reached in 1900.

Production of Finished Steel in France.

M. PINGET informs us that complete statistics of the production of Bessemer, open-hearth, and other steel in the form of ingots are not of record for the early years of this table, and that only the statistics of finished steel, including castings, are obtainable for those years. The following table gives the production of all kinds of finished steel in France from 1860 to 1901, in metric tons, including direct steel castings.

Years.	Metric tons.	Years.	Metric tons.	Years.	Metric tons.
1860....	29,848	1874..	208,787	1888..	517,294
1861...	37,777	1875..	256,393	1889..	529,302
1862....	47,096	1876..	241,842	1890..	581,998
1863....	37,483	1877..	269,181	1891..	638,530
1864....	41,559	1878..	312,921	1892..	682,527
1865....	40,574	1879..	333,265	1893..	664,032
1866....	37,764	1880..	388,894	1894..	674,190
1867....	46,477	1881..	422,416	1895..	714,523
1868....	80,564	1882..	458,238	1896..	916,817
1869....	110,224	1883..	521,820	1897..	994,891
1870....	94,387	1884..	502,908	1898..	1,174,075
1871....	86,126	1885..	553,839	1899..	1,239,660
1872...	141,705	1886..	454,000	1900..	1,226,537
1873....	150,529	1887..	493,294	1901..	1,151,170

The maximum production of finished steel in France was reached in 1899.

Production of Bessemer and Open-Hearth Steel Ingots in France.

THE production of Bessemer and open-hearth steel ingots and castings in France from 1888 to 1901 is given in the following table, in metric tons. This table has been revised by M. Pinget. About 20,000 tons of castings are made annually.

Years.	Metric tons.	Years.	Metric tons.	Years.	Metric tons.
1888....	591,807	1893..	789,852	1898..	1,433,717
1889....	626,232	1894..	818,200	1899..	1,499,026
1890....	683,358	1895..	875,974	1900..	1,565,164
1891....	744,484	1896..	1,180,743	1901..	1,465,071
1892...	825,486	1897..	1,325,213	.....	.....

Production of Coal and Lignite in France.

THE production of coal and lignite in France from 1787 to 1901 has been as follows, in metric tons, about one ton in fifty being lignite. France is a large importer of coal from Great Britain and other countries. It also imports coke.

Years.	Metric tons.	Years.	Metric tons.	Years.	Metric tons.
1787....	215,000	1872..	15,802,515	1887..	21,287,589
1802....	844,180	1873..	17,479,341	1888..	22,602,894
1812....	835,523	1874..	16,907,913	1889..	24,303,509
1820....	1,093,658	1875..	16,956,840	1890..	26,083,118
1830....	1,862,665	1876..	17,101,448	1891..	26,024,893
1840....	3,003,382	1877..	16,804,529	1892..	26,178,701
1850....	4,433,567	1878..	16,960,916	1893..	25,650,981
1860....	8,303,682	1879..	17,110,979	1894..	27,416,905
1865....	11,600,404	1880..	19,361,564	1895..	28,019,893
1866....	12,260,085	1881..	19,765,983	1896..	29,189,900
1867....	12,738,686	1882..	20,603,704	1897..	30,797,629
1868....	13,253,876	1883..	21,333,884	1898..	32,356,104
1869....	13,464,205	1884..	20,023,514	1899..	32,862,712
1870....	13,330,308	1885..	19,510,530	1900..	33,404,298
1871....	13,258,921	1886..	19,909,894	1901..	32,301,757

The maximum production of coal and lignite in France was reached in 1900.

Production of Iron Ore in Algeria.

THE production of iron ore in Algeria, which is now regarded as a part of the French Republic, was as follows from 1873 to 1900, in metric tons. All the iron ore mined in Algeria is exported. The figures given below are not included in the production of iron ore in France, already given.

Years.	Metric tons.	Years.	Metric tons.	Years.	Metric tons
1873....	444,718	1883..	556,980	1893..	393,921
1874....	534,524	1884..	492,936	1894..	343,830
1875....	557,285	1885..	419,174	1895..	318,416
1876....	511,569	1886..	432,761	1896..	374,476
1877....	454,236	1887..	437,643	1897..	441,467
1878....	375,838	1888..	383,958	1898..	473,569
1879....	417,853	1889..	351,800	1899..	550,941
1880....	614,146	1890..	474,632	1900..	601,788
1881....	656,646	1891..	404,964	.....	.....
1882....	567,119	1892..	452,603	.....	.....

Production of Pig Iron in France.

THE production of pig iron in France from 1819 to 1901 has been as follows, in metric tons.

Years.	Metric tons.	Years.	Metric tons.	Years.	Metric tons.
1819....	112,500	1870..	1,178,114	1886..	1,516,574
1830....	266,361	1871..	859,641	1887..	1,567,622
1840....	347,774	1872..	1,217,838	1888..	1,683,349
1850....	405,653	1873..	1,381,626	1889..	1,733,964
1855....	849,296	1874..	1,415,897	1890..	1,962,196
1859....	864,399	1875..	1,448,272	1891..	1,897,387
1860....	898,353	1876..	1,435,212	1892..	2,057,258
1861....	966,895	1877..	1,506,827	1893..	2,003,096
1862....	1,090,838	1878..	1,521,274	1894..	2,069,714
1863....	1,156,875	1879..	1,400,286	1895..	2,003,868
1864....	1,212,751	1880..	1,725,293	1896..	2,339,537
1865....	1,203,711	1881..	1,886,350	1897..	2,484,191
1866....	1,260,348	1882..	2,039,067	1898..	2,525,075
1867....	1,229,044	1883..	2,069,430	1899..	2,578,401
1868....	1,235,308	1884..	1,871,537	1900..	2,714,298
1869....	1,380,965	1885..	1,630,648	1901..	2,400,240

Production of Iron Ore in Belgium.

THE statistics of the mining and metallurgical industries of Belgium which we shall present are official Government statistics. This country is a large importer of iron ore but it is a large producer and exporter of coal. The imports of iron ore into Belgium in recent years have amounted annually to about 2,500,000 tons. Its exports of coal and coke aggregate about 6,000,000 tons annually. The production of iron ore from 1840 to 1901 has been as follows, in metric tons.

Years.	Metric tons.	Years.	Metric tons.	Years.	Metric tons.
1840....	191,812	1874..	527,050	1888..	185,542
1845....	394,544	1875..	365,044	1889..	181,526
1850....	299,272	1876..	269,206	1890..	172,291
1855....	852,134	1877..	234,127	1891..	202,204
1860....	809,176	1878..	207,157	1892..	209,943
1865....	1,018,231	1879..	195,212	1893..	238,783
1866....	886,641	1880..	253,499	1894..	311,222
1867....	602,829	1881..	223,412	1895..	312,637
1868....	519,740	1882..	208,867	1896..	307,031
1869....	628,046	1883..	215,670	1897..	240,774
1870....	654,332	1884..	176,005	1898..	217,370
1871....	697,272	1885..	187,118	1899..	201,445
1872....	749,781	1886..	152,508	1900..	247,890
1873....	503,565	1887..	172,436	1901..	218,780

The maximum production of iron ore in Belgium was reached in 1865.

Production of Pig Iron in Belgium.

THE production of pig iron in Belgium from 1845 to 1901 has been as follows, in metric tons.

Years.	Metric tons.	Years.	Metric tons.	Years.	Metric tons.
1845....	134,563	1872..	655,565	1887..	755,781
1850....	144,452	1873..	607,373	1888..	826,850
1855....	294,270	1874..	532,790	1889..	832,226
1860...	319,943	1875..	541,805	1890..	787,836
1861....	311,838	1876..	490,508	1891..	684,126
1862....	356,550	1877..	470,488	1892..	753,268
1863....	392,078	1878..	518,646	1893..	745,264
1864....	449,875	1879..	389,330	1894..	818,597
1865....	470,767	1880..	608,084	1895..	829,234
1866....	482,404	1881..	624,736	1896..	948,023
1867...	423,069	1882..	726,946	1897...	1,035,037
1868...	435,754	1883..	783,433	1898..	979,755
1869....	534,319	1884..	750,812	1899..	1,024,576
1870....	563,468	1885..	712,876	1900..	1,018,561
1871....	609,230	1886..	701,677	1901..	764,180

Production of Steel Ingots in Belgium.

Years.	Metric tons.	Years.	Metric tons.	Years.	Metric tons.
1865...	650	1886..	155,169	1895..	407,634
1870....	4,321	1887..	216,186	1896..	598,974
1875....	54,420	1888..	231,847	1897..	616,604
1880....	132,052	1889..	254,397	1898..	653,130
1881...	141,640	1890..	221,296	1899..	731,249
1882....	182,627	1891..	221,913	1900..	655,199
1883....	179,489	1892..	260,037	1901..	515,780
1884...	185,916	1893..	273,113	.....	.....
1885...	155,012	1894..	405,661	.....	.....

Production of Finished Steel in Belgium.

THE following table gives the production of finished steel in Belgium, including steel rails.

Years.	Metric tons.	Years.	Metric tons.	Years.	Metric tons.
1865....	545	1878..	102,259	1891..	206,305
1866...	930	1879..	88,952	1892..	208,281
1867....	1,420	1880..	102,772	1893..	224,922
1868....	1,857	1881..	119,237	1894..	341,318
1869....	2,826	1882..	151,291	1895..	367,947
1870....	4,062	1883..	156,301	1896..	519,311
1871....	6,622	1884..	153,999	1897..	527,617
1872....	12,389	1885..	125,461	1898..	567,728
1873....	18,533	1886..	137,771	1899..	633,950
1874....	30,932	1887..	191,445	1900..	568,539
1875....	45,536	1888..	185,417	1901..	489,640
1876....	64,543	1889..	214,561	.....	.....
1877....	90,646	1890..	201,817	.....	.....

Production of Coal in Belgium.*

Years.	Metric tons.	Years.	Metric tons.	Years.	Metric tons.
1830....	2,568,054	1873..	15,778,401	1888..	19,218,481
1835....	2,638,731	1874..	14,669,029	1889..	19,869,980
1840....	3,929,962	1875..	15,011,331	1890..	20,365,960
1845....	4,919,156	1876..	14,329,578	1891..	19,675,644
1850....	5,820,588	1877..	13,669,077	1892..	19,583,173
1855....	8,409,330	1878..	14,899,175	1893..	19,410,519
1860....	9,610,895	1879..	15,447,292	1894..	20,534,501
1865....	11,840,703	1880..	16,886,698	1895..	20,450,604
1866....	12,774,662	1881..	16,873,951	1896..	21,252,370
1867....	12,755,822	1882..	17,590,989	1897..	21,492,446
1868....	12,298,589	1883..	18,177,754	1898..	22,088,335
1869....	12,943,994	1884..	18,051,499	1899..	22,072,068
1870....	13,697,118	1885..	17,437,603	1900..	23,462,817
1871....	13,733,176	1886..	17,285,543	1901..	22,213,410
1872....	15,658,948	1887..	18,378,624	.....	.....

* The production of lignite is not included.

